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PHOTOGRAPHIC INTERPRETATION REPORT

ANALYSIS OF SUPPORT BUILDINGS AT SOVIET SINGLE-SILO ICBM SITES

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JUNE 1967

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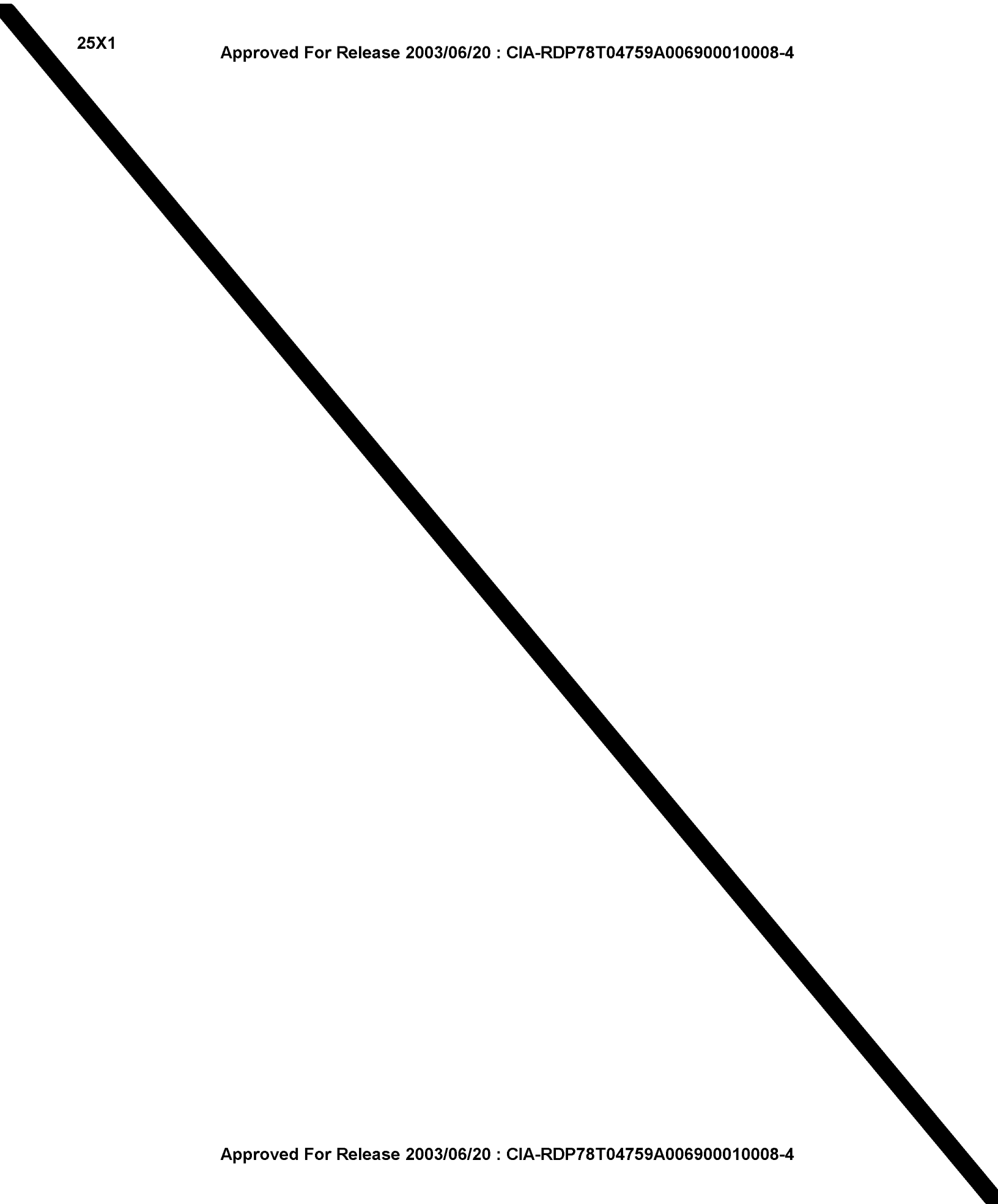

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SUMMARY AND CONCLUSIONS

A small support building is located between the inner and outer security fences at all deployed Soviet single-silo ICBM launch sites (Type IIIC and Type IIID). The only known exceptions are certain of the "Transfer Point" sites constructed close to the rail-to-road transfer point and not associated with a deployed launch group.

Two variations of these small interfence support buildings have appeared: a first-generation arch-roofed design, and a second-generation flat-roofed structure. The arch-roofed type, [redacted] is earth mounded; the rectangular second-generation building, [redacted] is flat roofed and not earth mounded or revetted. There are 3 windows and a door on the front side of the second-generation building, and 3 windows on the rear side. The changeover to second-generation flat-roofed buildings was observed on [redacted] photography [redacted] and continues to date.

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25X1D
25X1
25X1D

It is considered remotely possible that this building contains some equipment that directly supports the launch silo (such as the diesel generator, climate control equipment, and electronic security equipment found in the launcher support [redacted] silo), but this is very unlikely due to the lower level of security between the fences, the relatively great distance of the building from the silo, and, above all, the low survivability of the building relative to that of the silo. If there is any silo-related equipment in the building between the fences, it would be such that the silo could function without it for a period of time.

25X1

The basic function of the small building between the fences is most probably to house a small guard force at each launch site, and to house technicians, maintenance men, and other personnel when they are temporarily working at the site. The function of the small [redacted] structure near the interfence building and the linear scarring between the fences cannot be determined, but they are probably associated with site security.

25X1D

A change in construction technique has also been observed at the group of control-site-associated support buildings positioned just outside the double fence which surrounds the site. The former arch-roofed earth-mounded design of these buildings has been superseded by flat-roofed buildings of corresponding size and position. As with the second-generation interfence building, these have windows along the front and rear sides.

FIRST-GENERATION INTERFENCE BUILDING

The first-generation support building between the fences at Type IIID launch sites, [redacted] is arch-roofed and earth-mounded with a single entrance (Figures 1 and 2). The same type of building is observed at Type IIIC launch sites but, in some cases, is larger with an entrance at each end (Figure 13). [redacted] An unidentified structure, with a roughly oval opening [redacted] is located at the junc-

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25X1D

ture of the entryway and the building. A vertical pipe/pole [redacted] possibly for ventilation, is at each corner of the building. After the building is earth mounded, the oval opening and the 4 pipes/poles often are still detectable as irregularities in the earth mound (Figure 3).

Typically, ditching extends from the building and connects with the network of intersite ditching which enters the silo headworks at the 45-degree appendage (Figure 4). A first-generation support building at a completed Type IIID site, with grass apparently covering the earth mound, is shown in Figure 5. Also visible are the positions of the 4 vertical pipes/poles at the corners of the building and linear scarring between the fences. This scarring, sometimes in the form of straight lines with short lateral scars at intervals, is visible between the 2 security fences at both Type IIIC and IIID sites. Although the function of this scarring is undetermined, it is suggestive of some type of security measure. In some instances, the scarring appears to connect with a small structure [redacted] within close walking distance of the interfence support building. A distinctive path between these 2 structures appears to be kept open and free of snow even when other elements of the site have not been cleared.

SECOND-GENERATION INTERFENCE BUILDING

The changeover from arch-roofed first-generation buildings to the second-generation flat-roofed buildings began [redacted] and subsequently was observed at all complexes with Type IIIC and IIID sites under construction. The flat-roofed building begins as a set of 6 excavations, [redacted] for foundation footings (Figures 6 and 7). The chronology of construction of the building and the launch silo is roughly parallel but may vary, as indicated in Figures 6 and 7. Walls, [redacted] are erected on the 6 footings to form a [redacted] rectangular structure (Figure 8) in which a number of partitions are placed to form 9 rooms (Figures 9, 10, [redacted] It is possible that the thickness of the walls is for insulation against climatic extremes.

[redacted]

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CONSIDERATION OF INDIVIDUAL LAUNCH CAPABILITY

It has been postulated that the small support building between the security fences at Type IIID launch sites could house the personnel and equipment necessary for individual monitoring and launching of the missile, should the need arise. Although this possiblity cannot be completely ruled out by analysis of available photography, several considerations make it highly unlikely that this support building houses launch control equipment.

Although the survivability of the first-generation arch-roofed earth-mounded building may have suggested that it could house personnel and equipment for individual launch control, the second-generation building with its flat roof, windows, and no earth mounding does not support this hypothesis. It is likely that the first design was earth mounded for reasons other than the protection of launch control equipment.

The location of the building between the fences makes it less likely that it could house launch control equipment, since such equipment would probably warrant the same double security afforded the launch silo itself. Indeed, the location between the fences suggests an "inner" and "outer" security arrangement whereby certain guard-force personnel would be granted clearance to work in the "outer" security area without compromising "inner" security which could be continuously monitored electronically from the launch control center. This would be an expedient arrangement if a guard force is maintained at each launch site, because the higher security clearances required for "inner" access would not have to be obtained for the numerous guard-force personnel.

If there were launch control equipment in each site support building, it would create an exceedingly complex security problem involving clearances for the large number of personnel required, and maintaining the complicated authentication codes, equipment, and communications apparatus. At some of the larger ICBM complexes, launch sites are so numerous (over 100 in one case) that this consideration might make individual launch control equipment impractical.

These small support buildings also appear at the control sites, which have a control bunker for the launch group near the launch silo. Since the silo at a control site already has an adjacent control bunker, it is unlikely that the small support building (between the fences rather than inside them) would contain additional launch control equipment.

Ditching is observed tying the support building between the fences into the network of ditching connecting all the launch sites at the complex but there is no evidence that this ditching contains control cabling, since this support

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building normally would be tied into the underground telephone and electric power network for the complex. Therefore, the ditching neither confirms nor negates a control cabling connection to this building.

Although the chronology of construction for the small support building and the launch silo at Type IIID sites is roughly concurrent, in some cases the building is externally complete before the silo. The building at Type IIIC launch sites is usually completed earlier than the silo, as the Type IIIC silo takes longer to build. Chronology does not appear to offer any insight into the question of individual launch capability.

CONTROL-SITE-ASSOCIATED SUPPORT BUILDINGS

The changeover from first-generation arch-roofed earth-mounded buildings to the second-generation flat-roofed unmounded buildings with windows also includes other support buildings associated with control sites at Type IIIC and IIID complexes. Figure 13 shows a standard complement of 3 first-generation control-site-associated support buildings, separately secured just outside the double fence at a Type IIIC control site: 2 long arch-roofed earth-mounded buildings, and a third small arch-roofed earth-mounded building. The shorter of the 2 long buildings has a drive-in entryway at the end farthest from the launch site. Similar first-generation support buildings are under construction at the Type IIID control site shown in Figure 15; the drive-in entryway is visible at one end of the shorter building, and the small building between the fences is partially earth mounded. The white dots seen in rows along the earth-mounded buildings in Figure 13 correspond to the vertical pipes/poles which cast shadows along each side of the 2 long arch-roofed buildings in Figure 15. These pipes/poles apparently serve the same function as those visible at the small interfence building in Figures 1 and 2.

The second-generation control-associated support buildings have also been changed to a flat-roofed design, as is true of the small interfence building, with rows of windows along the sides. A comparison of the 2 long arch-roofed buildings in Figure 15 with the 2 long second-generation flat-roofed buildings shown under construction in Figure [redacted] 17 illustrates the changeover at Type IIID control sites. The new flat-roofed support buildings are about twice as wide as the first-generation arch-roofed buildings, but only about half as long, providing approximately the same interior space. Figures [redacted] 17 illustrate the progress of construction work on the long flat-roofed buildings.

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[redacted] In Figure 17, the longer building is completely roofed and the 100-foot building is half roofed, with work just beginning on the roof

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over the left half (possibly drive-in) where the shadow of the wall clearly reveals the row of 4 windows. Ditching extends from the 2 long support buildings to the small building between the fences. In Figure 17, a ditch has just been started from the control bunker to eventually connect with both the interfence building

25X1D

The changeover to second-generation flat-roofed buildings at a Type IIIC control site is shown in Figure 20. Instead of the long arch-roofed buildings seen in Figure 13, there are 2 long flat-roofed buildings under construction just outside the site security fences near the access road,

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The variation in relative positions of these long buildings is illustrated in Figure 20.

Although the small interfence building at Type IIID sites is the same at both control sites and non-control sites, this is not true of the Type IIIC control sites where both the first- and second-generation interfence buildings are larger than at non-control sites. At the Type IIIC control site shown in Figure 13, the first-generation interfence building is larger

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and has an entrance on each end. In Figure 20, the second-generation flat-roofed building between the fences is 20 feet longer;

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No other differences are apparent. The reason for this increased size of the interfence building at Type IIIC control sites has not been determined, but it is possible that a control site requires more security guards than a non-control site. In Figure 13, there is a third small earth-mounded first-generation building with the 2 longer ones just outside the double fence. This third building is not apparent in the second-generation group of flat-roofed control-site-associated support buildings (Figure 20). The function of this third building may be incorporated into one of the 2 longer flat-roofed buildings.

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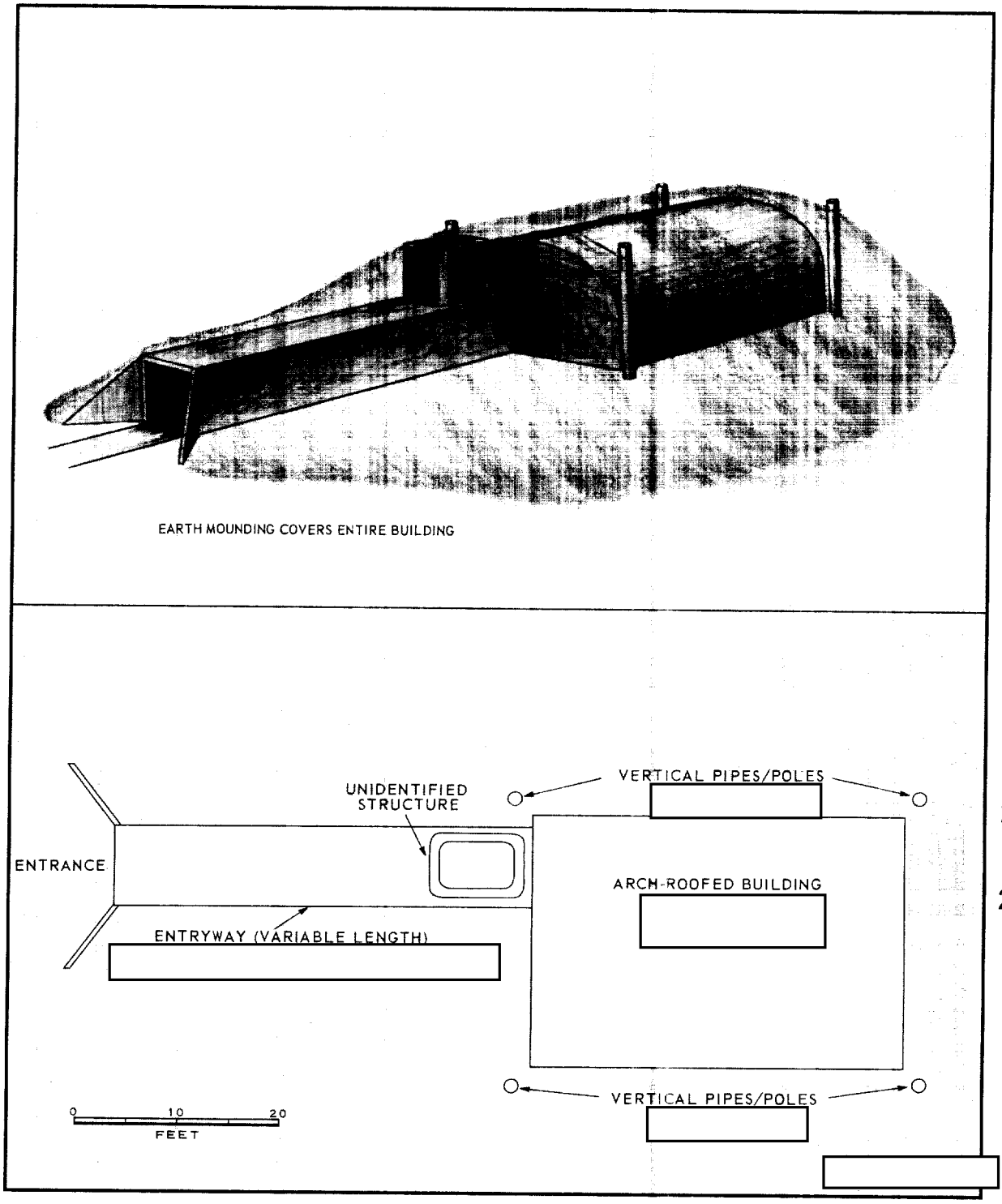

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FIGURE 1. ARTIST'S CONCEPT OF FIRST-GENERATION INTERFENCE SUPPORT BUILDING, TYPE IIID LAUNCH SITES.

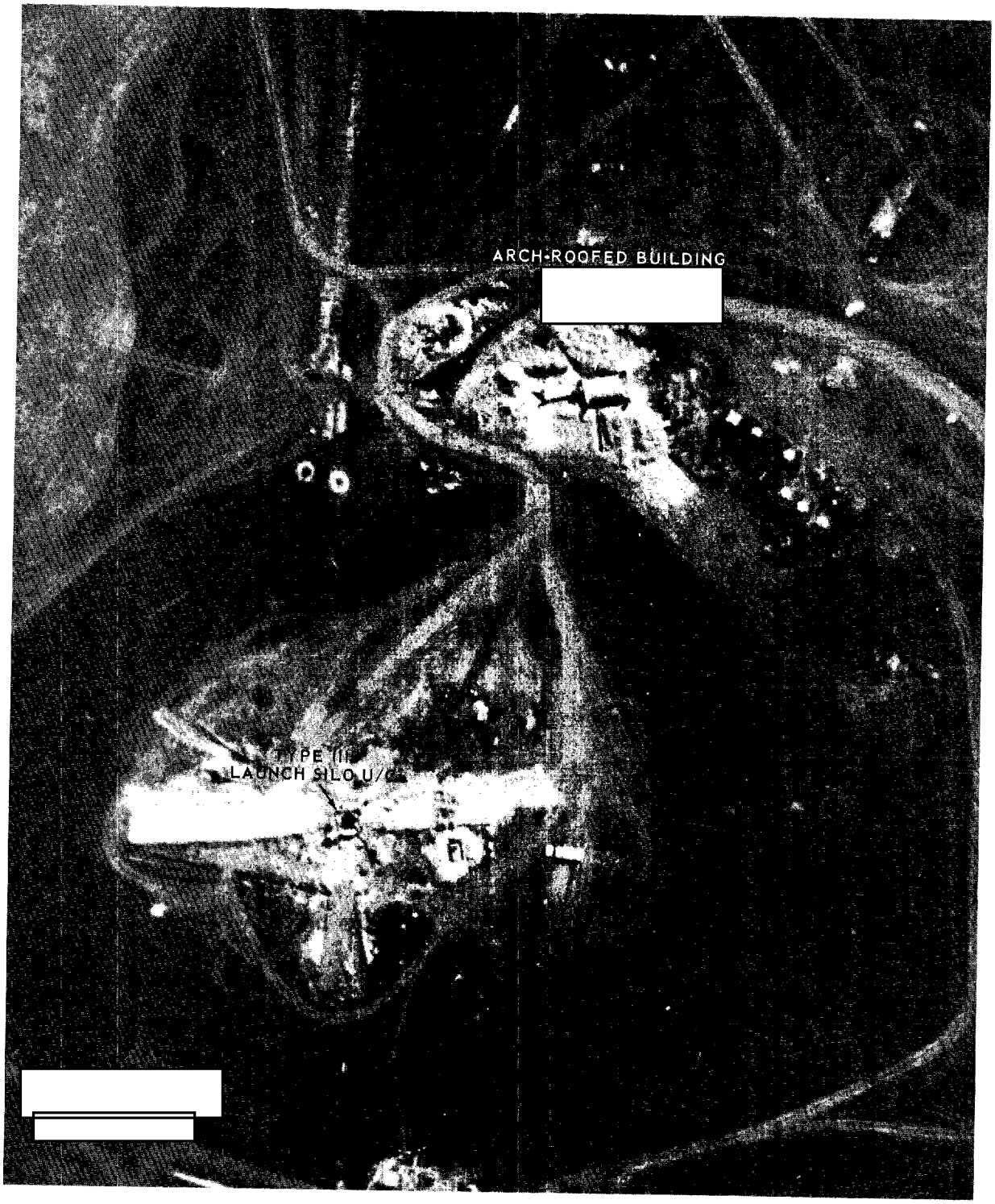

FIGURE 2. FIRST-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 35 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

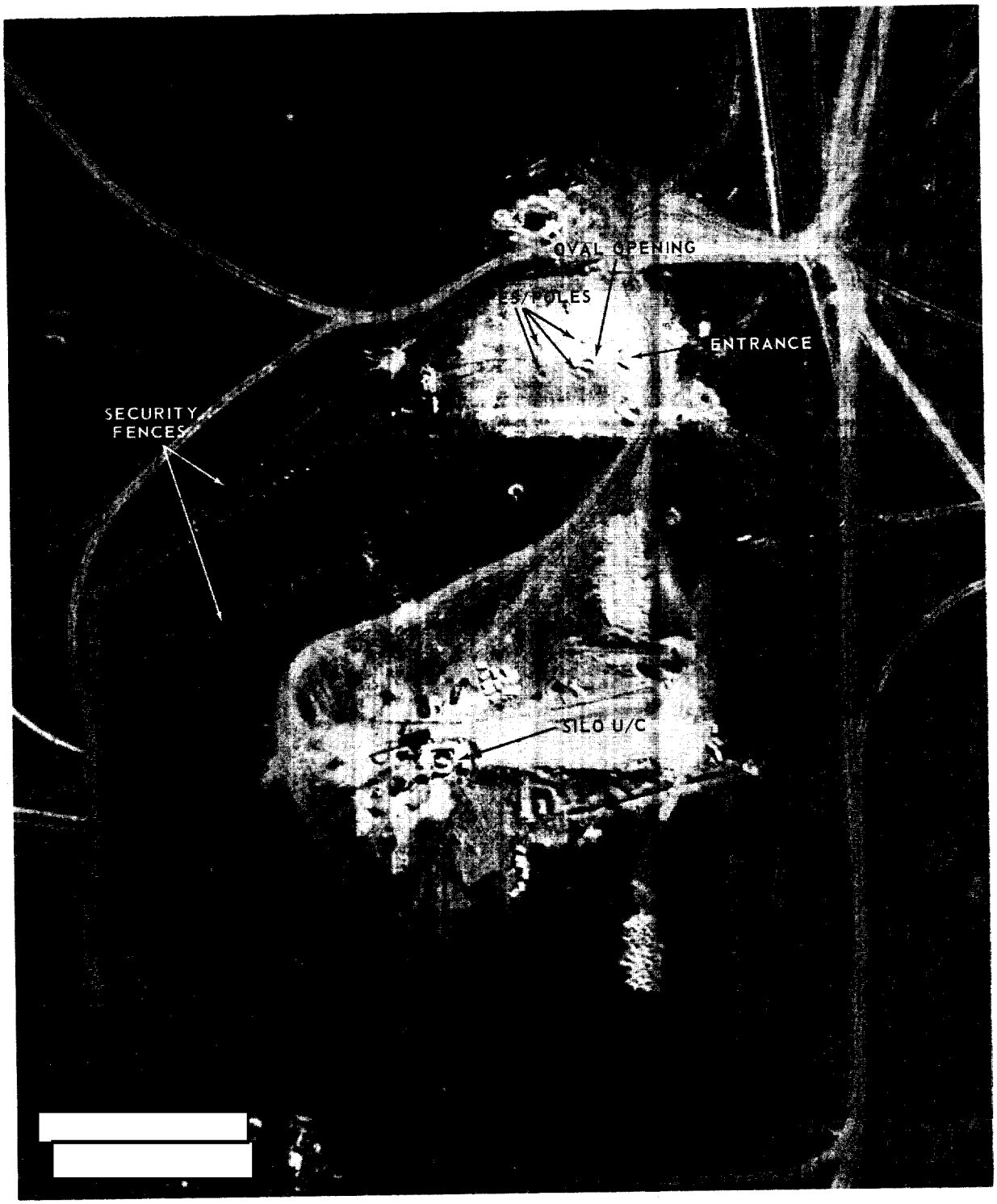

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FIGURE 3. POSITIONS OF PIPES/POLES AND OVAL OPENING AT FIRST-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 38 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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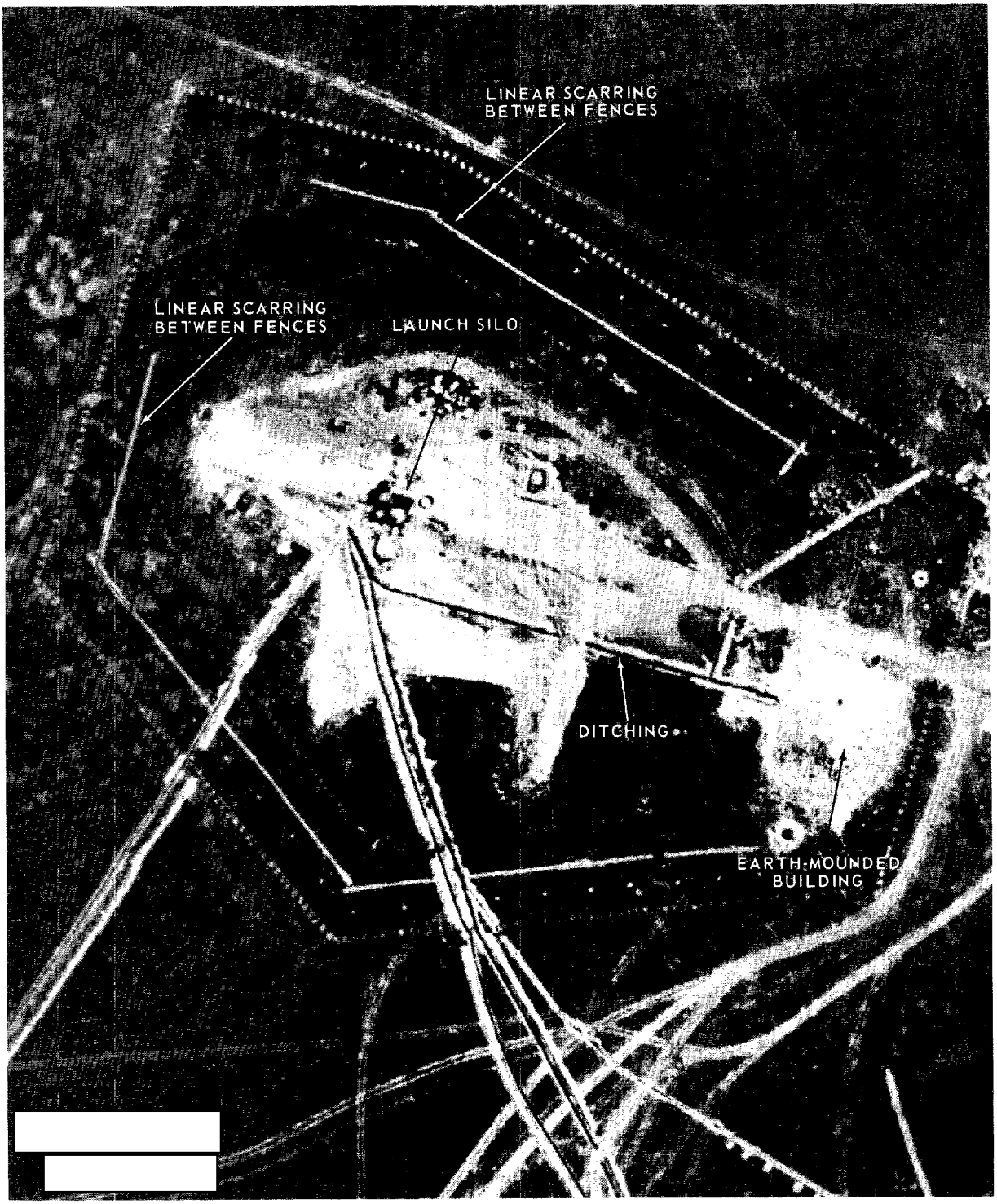

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FIGURE 4. DITCHING CONNECTING FIRST-GENERATION INTERFENCE SUPPORT BUILDING WITH SILO HEADWORKS AND INTERSITE DITCHING NETWORK, LAUNCH SITE 28 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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FIGURE 5. FIRST-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 19 (COMPLETED TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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FIGURE 6. SILO EXCAVATION AND FOUNDATION FOOTINGS FOR SECOND-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 70 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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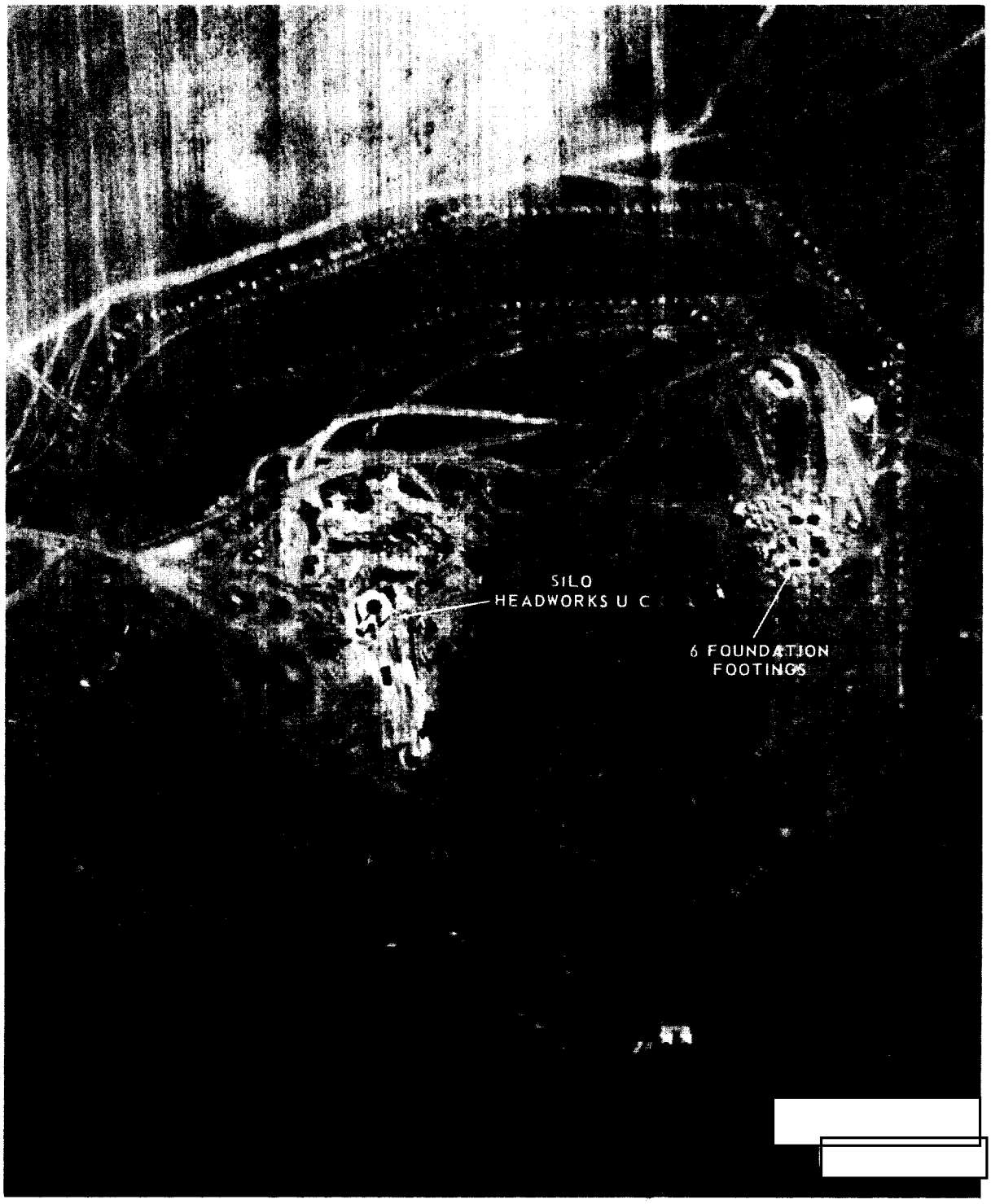

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FIGURE 7. SILO HEADWORKS AND FOUNDATION FOOTINGS FOR SECOND-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 67 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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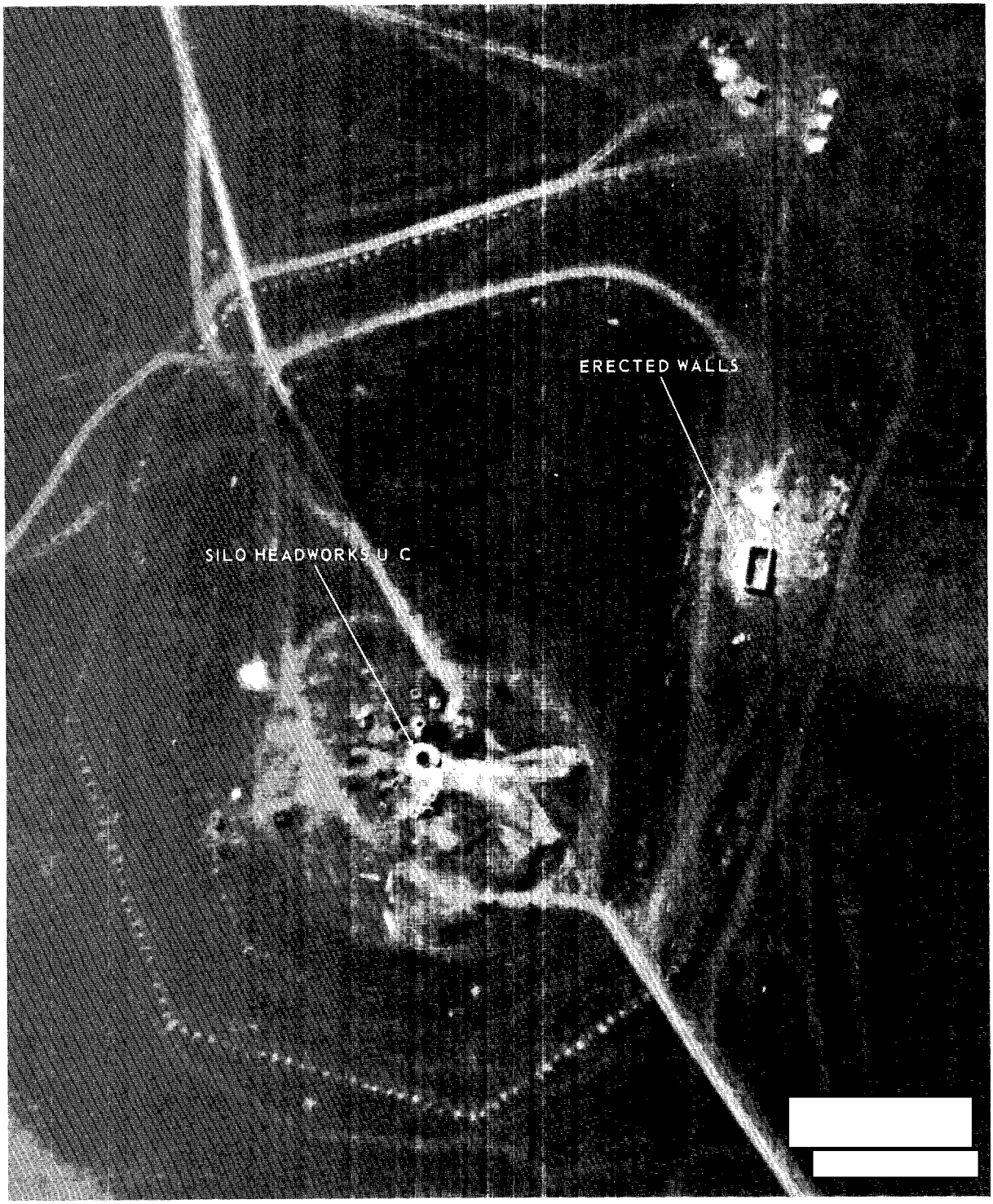

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FIGURE 8. ERECTED WALLS FOR SECOND-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 72 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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FIGURE 9. PARTITIONS UNDER CONSTRUCTION IN SECOND-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 68 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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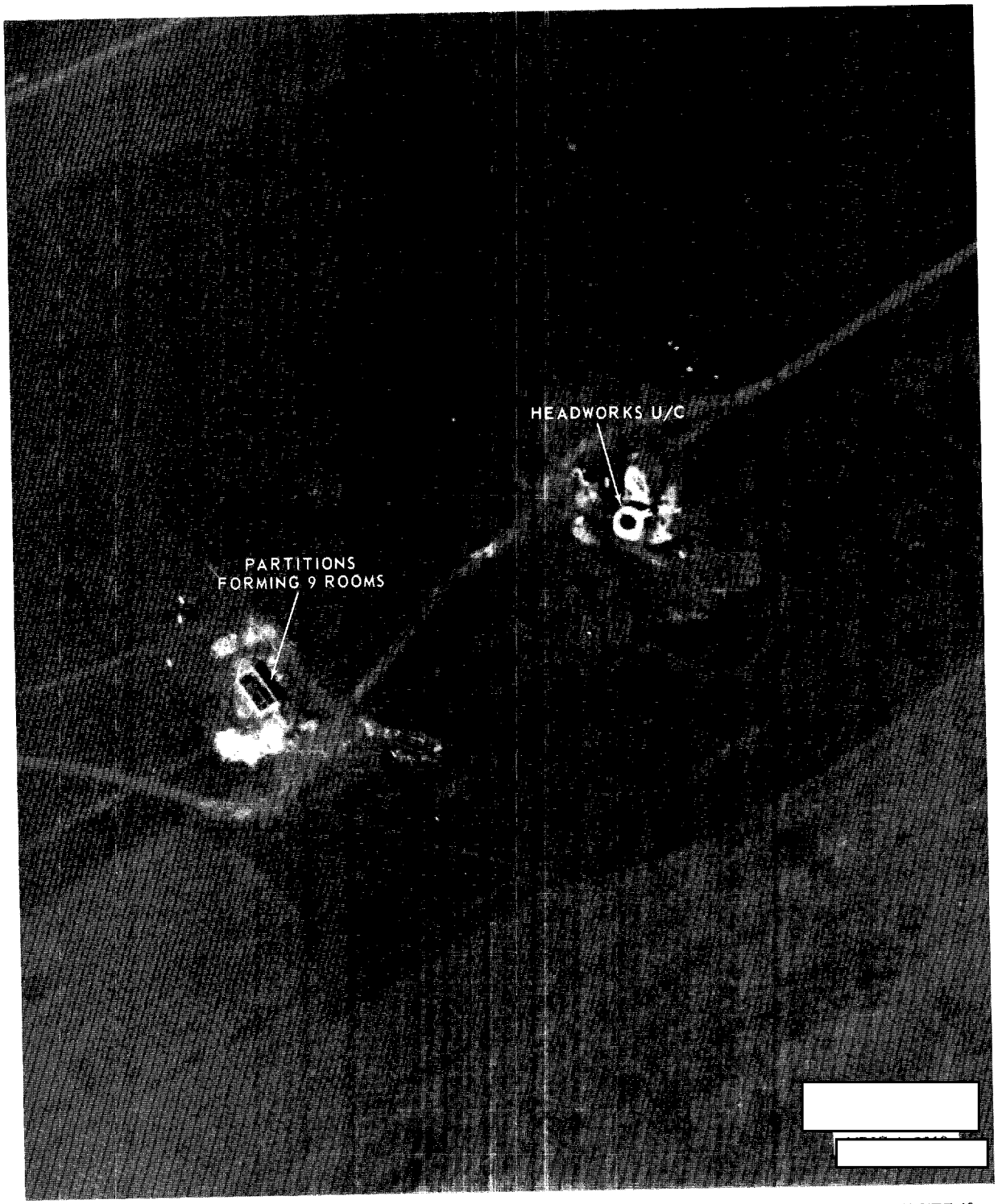

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FIGURE 10. COMPLETED PARTITIONING OF SECOND-GENERATION INTERFENCE SUPPORT BUILDING, LAUNCH SITE 69 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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FIGURE 13. FIRST-GENERATION CONTROL-SITE-ASSOCIATED SUPPORT BUILDINGS, LAUNCH SITE 3 (COMPLETED TYPE IIIC), ALEYSK ICBM COMPLEX.

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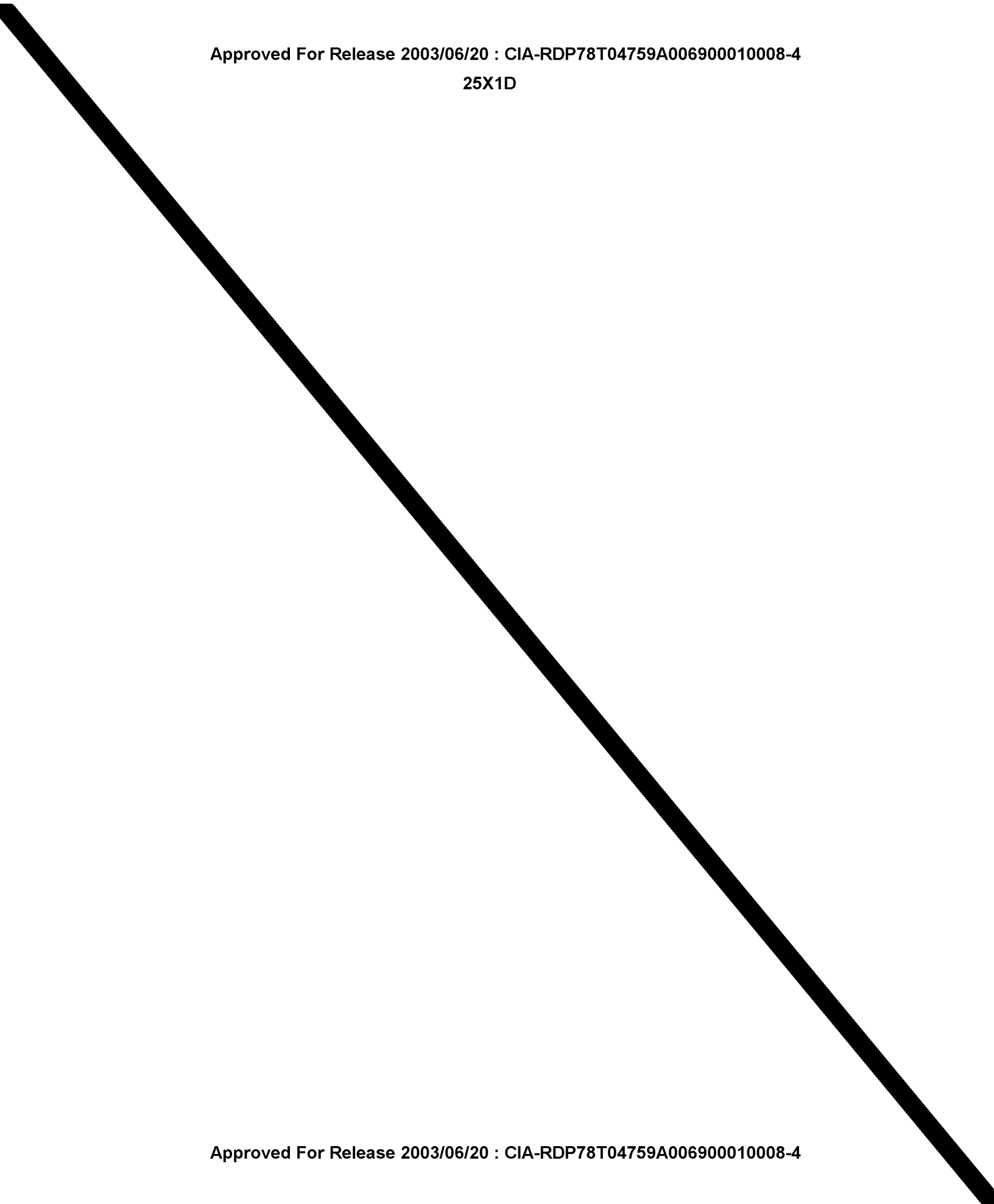

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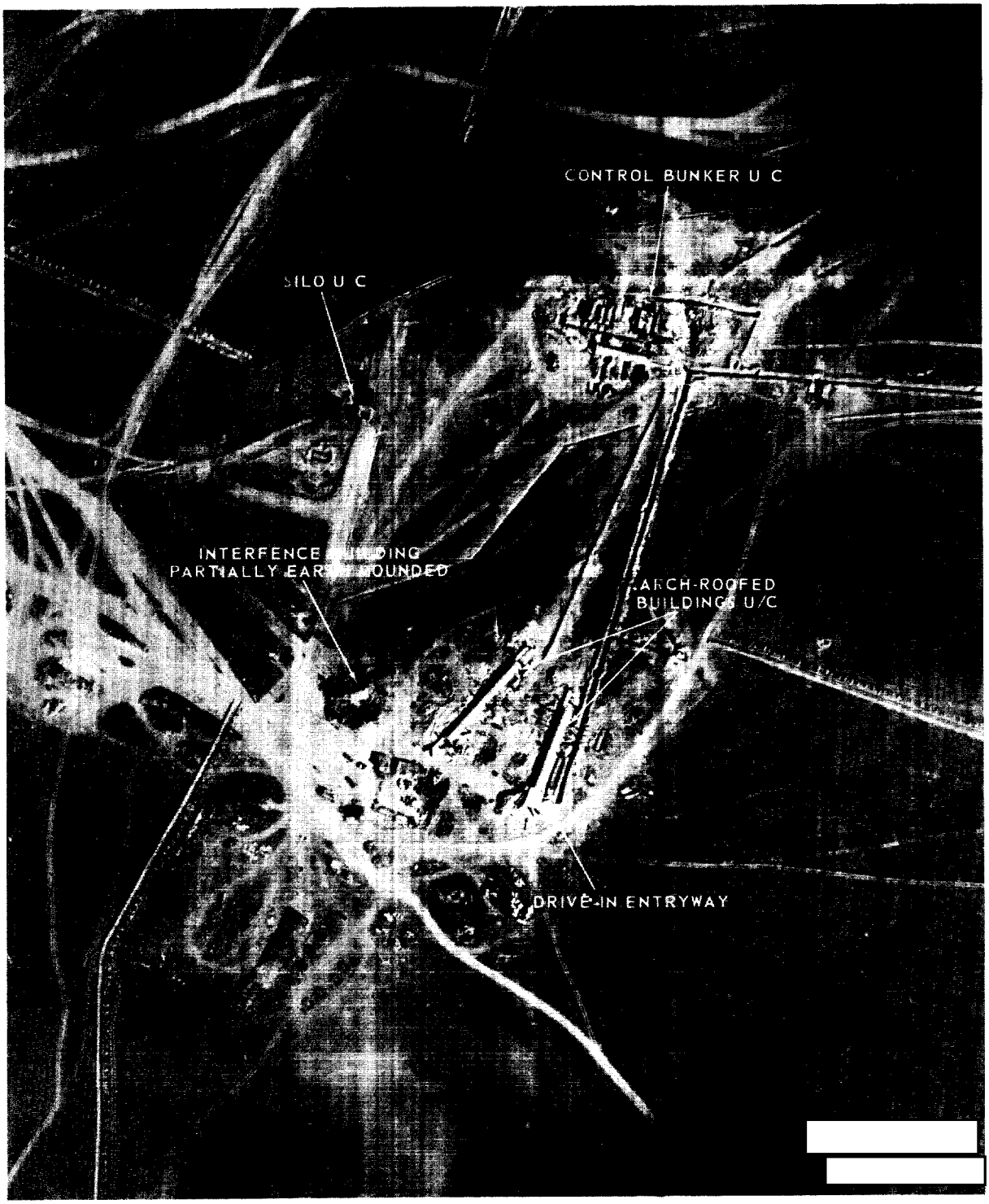

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FIGURE 15. FIRST-GENERATION CONTROL-SITE-ASSOCIATED SUPPORT BUILDINGS UNDER CONSTRUCTION, LAUNCH SITE 46 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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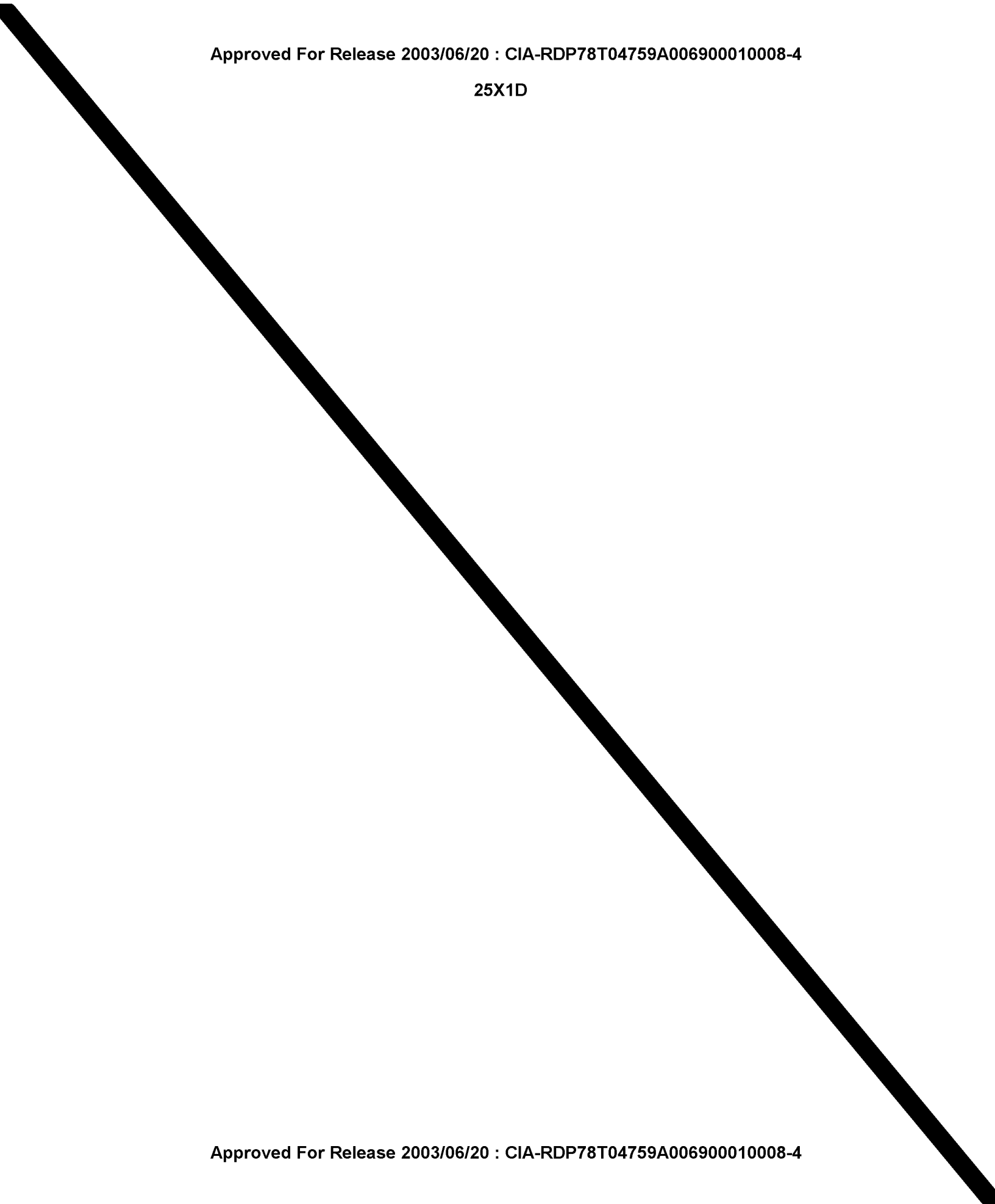

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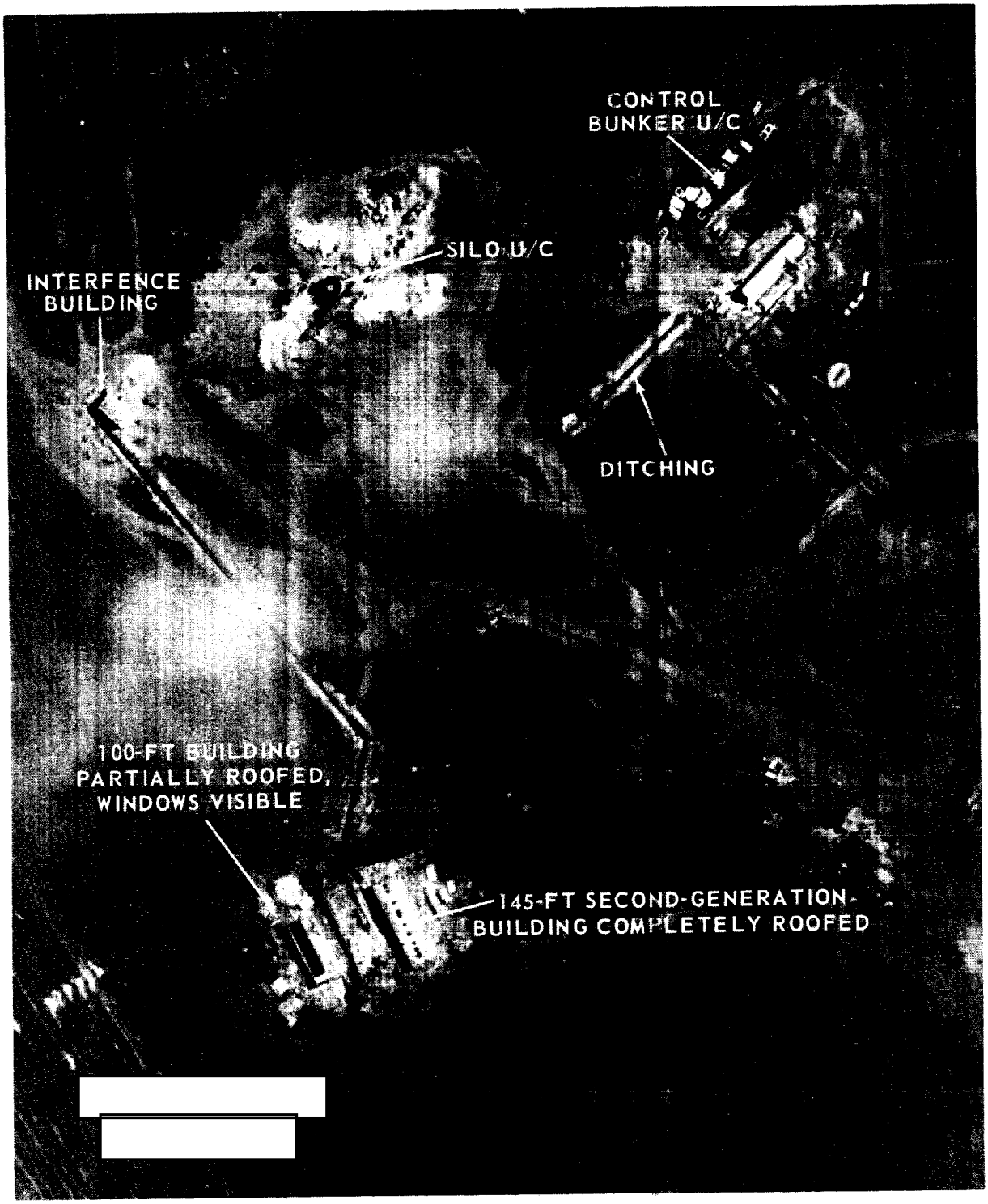

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FIGURE 17. CONSTRUCTION PROGRESS, SECOND-GENERATION CONTROL-SITE-ASSOCIATED SUPPORT BUILDINGS, LAUNCH SITE 63 (TYPE IIID), OLOVYANNAYA ICBM COMPLEX.

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FIGURE 20. SECOND-GENERATION CONTROL-SITE-ASSOCIATED SUPPORT BUILDINGS UNDER CONSTRUCTION, LAUNCH SITE 14 (TYPE IIIC), ZHANGIZ-TOBE ICBM COMPLEX.

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PHOTOGRAPHY

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